



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,938	01/02/2004	Eric C. Bauer	BAUER01	1904
28160	7590	04/05/2005	EXAMINER	
HOWARD J. WALTER JR.			BAREFORD, KATHERINE A	
66 BACON DR			ART UNIT	
SHELBURNE, VT 05482-7495			PAPER NUMBER	

1762

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/750,938	Applicant(s) BAUER, ERIC C.	
	Examiner Katherine A. Bareford	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claims

1. As to claim 13, please note that at lines 3-4, "including aluminum oxide, chrome oxide, titanium oxide and zirconium oxide" does not limit the term "metal oxides".

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 7-11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galligan et al (US 2004/0009106).

Galligan teaches a method of fabricating an object that can be a free standing object. Paragraphs [0061] , [0067] and [0075] and figure 2H. An open mesh substrate can be formed into a three dimensional free standing object generally having the shape and appearance of the desired finished object. Paragraphs [0061], [0067], [0074], [0075] and figure 2H. The free standing mesh object can be thermally sprayed to cover the exposed surface of the substrate. Paragraphs [0061], [0074], [0075] and figure 2H. This forms a substantially continuous layer of coating material. Paragraphs [0061], [0074], [0075] and figure 2H.

Claim 2: the mesh substrate can be a wire mesh. Paragraph [0074].

Claim 3: the wire can be formed of copper, aluminum or stainless steel. Paragraph [0074].

Claim 4: the coating material can comprise a metal. Paragraph [0064].

Claim 5: the coating material can be substantially pure metal. Paragraph [0064] (nickel, for example).

Claim 7: the coating material can be an alloy. Paragraph [0064].

Claim 8: the coating material can comprise a wire. Paragraph [0061].

Claim 9: the coating material can comprise a powder. Paragraph [0061] (combustion powder spraying, for example).

Claim 10: the thermal spraying step can be in the form of an electric arc wire spray method. Paragraphs [0062] and [0066].

Claim 11: the coating material can comprise two similar or dissimilar conductive wires. Paragraphs [0062]—[0063].

Claim 13: the coating material can an aluminum alloy, for example. Paragraph [0064].

Galligan teaches all the features of these claims except that the coating substantially covers all of the exposed surface of the substrate to form a substantially continuous layer.

However, Galligan teaches to apply this metal “anchor” layer to the substrate by thermal spraying and then applying a catalyst layer over the anchor layer, with the anchor layer bonding the catalyst to the substrate. See paragraph [0065]. As a result, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Galligan cover all of the exposed surfaces of the substrate with an expectation of forming a desirable anchor layer

Art Unit: 1762

system on the substrate, since if all of the substrate was covered with the anchor layer, optimum bonding of the applied catalyst layer will occur, since all areas of the substrate would be able to bond the catalyst. As to the continuous layer, even if the coating remains porous, the coating will be continuous as claimed, since all areas of the coating are connected to other areas, as shown by figure 2H.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over De 195 20 146 C1 (hereinafter '146).

'146 teaches a method of fabricating an object that can be a free standing object. Abstract and figures 3-4. An open mesh substrate can be formed into a three dimensional free standing object generally having the shape and appearance of the desired finished object. Abstract and figures 3-4. The free standing mesh object can be thermally sprayed to cover the exposed surface of the substrate. Abstract and figures 3-4. This forms a substantially continuous layer of coating material. Abstract and figures 3-4 (as the apertures are reduced, all of the mesh is covered and joined).

'146 teaches all the features of this claim except that the coating substantially covers all of the exposed surface of the substrate to form a substantially continuous layer.

However, '146 teaches to apply the layer to a mesh body to reduce the apertures of the body to the required size. See the abstract. As a result, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '146 cover all of the exposed surfaces of the substrate with an expectation of forming a desirably coated article, since

the substrate is made of mesh and it is desired to reduce the apertures of the mesh to a desired size, thus suggesting that all of the body be coated so that all mesh areas be reduced as desired.

5. Claims 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galligan as applied to claims 1-5, 7-11 and 13 above, and further in view of Matsen et al (US 6566635).

Galligan teaches all the features of these claims except (1) the zinc coating (claim 6) and (2) the complex shape of the substrate (claim 12).

However, Matsen teaches that it is well known to be desired to thermally spray coat complex geometric shapes formed of mesh, which would include concave and convex compound surfaces. See figures 3-4 and column 7, lines 1-40. A spray coating is provided and then a second spray coating is provided on top. See figures 3-4 and column 7, lines 30-40.

It is the Examiner's position that it is well known in the thermal spraying art to arc spray zinc coatings. If applicant disagrees, he should so state on the record.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Galligan to use the spray process to spray a complex shape with a variety of metal coatings as suggested by Matsen in order to provide for desirably adherently coated articles, because Galligan teaches a desirable method using arc thermal spraying to coat various free standing porous articles, such as wire mesh, and Matsen teaches the desire to coat a variety of complex mesh shapes with thermal spraying methods. It would further have been obvious to modify Galligan in view of Matsen to coat the article with a known spraying material such as zinc

Art Unit: 1762

in order to provide a desirable coated article depending on the final intended use, because of the showing of Galligan in view of Matsen of the desire to coat various different mesh articles by thermal spraying.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:00-3:30) with the First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and for After Final communications.

Other inquiries can be directed to the Tech Center 1700 telephone number at (571) 272-1700.

Furthermore, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


KATHERINE BAREFORD
PRIMARY EXAMINER